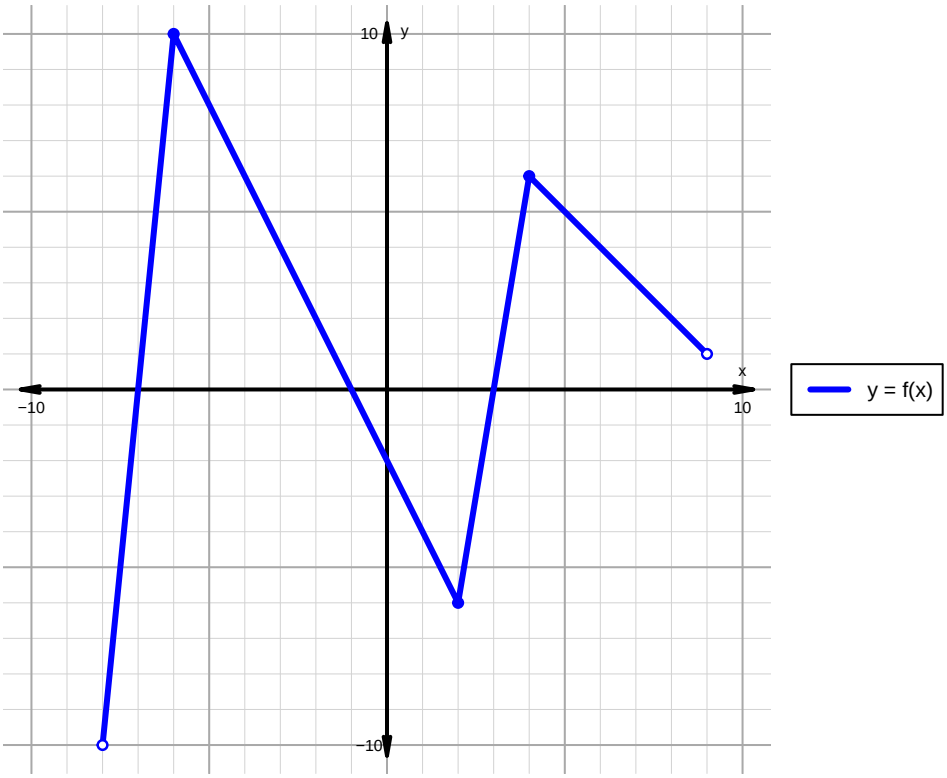
Name: Date:

Intervals, Transformations, and Slope Solution (version 167)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7,-1)\cup(3,9)$
Negative	$(-8,-7)\cup(-1,3)$
Increasing	$(-8,-6)\cup(2,4)$
Decreasing	$(-6,2)\cup(4,9)$
Domain	$(-8,9)$
Range	$(-10,10)$

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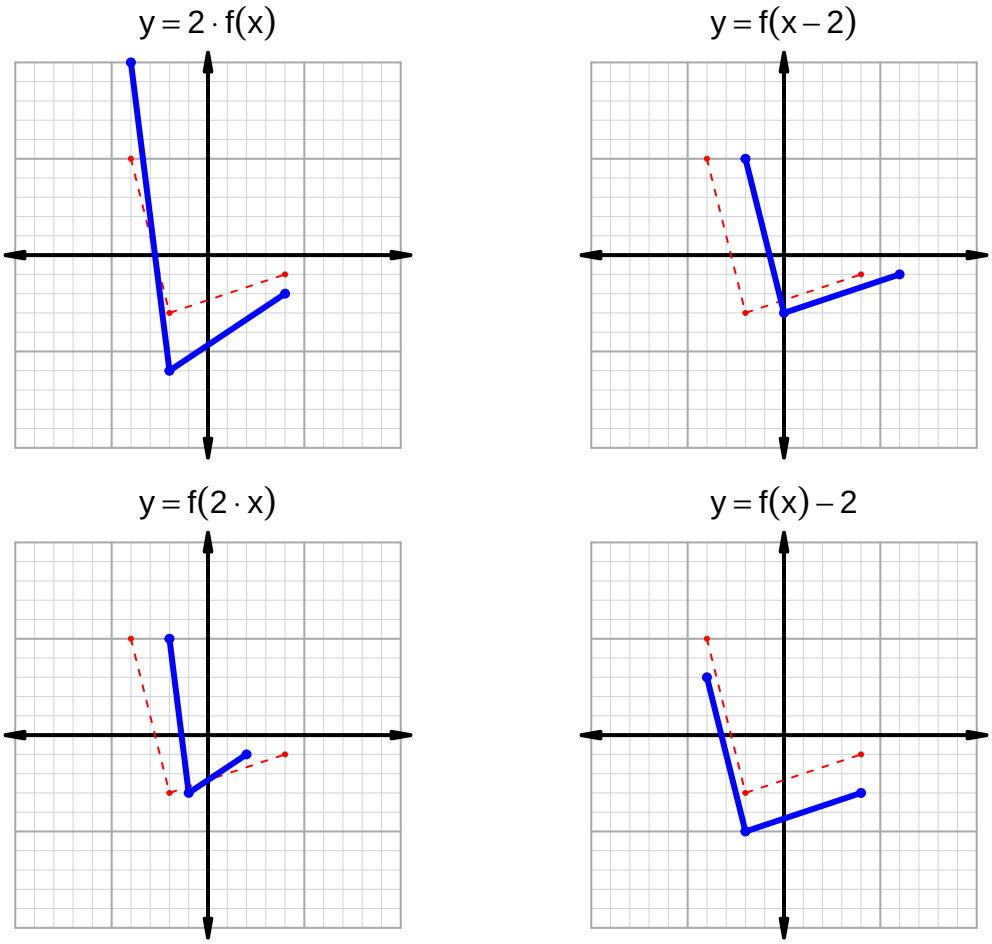
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 64$ and $x_2 = 80$. Express your answer as a reduced fraction.

x	$g(x)$
35	64
45	80
64	45
80	35

$\frac{g(80)-g(64)}{80-64} = \frac{35-45}{80-64} = \frac{-10}{16}$

The greatest common factor of -10 and 16 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{8}$$